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10/774,326

02/06/2004

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EXAMINER

DIAMOND, ALAN D

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/774,326

Applicant(s)

NOMURA ET AL.

Examiner

Alan Diamond

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02062004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because Figure 28 has Japanese lettering next to the X and Y. This lettering should not be present. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Suggested Claim Language***

2. In claim 18 at line 4, and in claim 19 at line 4, it is suggested that the word "the" be inserted before the word "solar".

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4, 5, 8, 10-16, 18, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because it is not clear which solar cell module is being referred to by the term "solar cell module" at line 4. Note that parent claim 1 has a solar cell module and an adjacent solar cell module. It is suggested that said term be changed to "the adjacent solar cell module".

Claim 5 is indefinite because it is not clear which solar cell module is being referred to by the term "solar cell module" at line 4. Note that parent claim 1 has a solar cell module and an adjacent solar cell module. It is suggested that said term be changed to "the adjacent solar cell module".

Claim 8 is indefinite because the term "substantially the same height" is indefinite because it is subjective. It is suggested that "substantially" be changed to "approximately".

Claim 10 is indefinite because it is not clear which solar cell module is being referred to by the term "the solar cell module" at lines 3-4. Note that parent claim 7 at line 1 refers to plural solar cell modules. It is suggested that said term be changed to "each solar cell module".

Claim 10 is indefinite because it is not clear which tile is being referred to by the term "and tile" at line 4. It is suggested that said term be changed to "and the one tile".

Claim 11 is indefinite because it is not clear which solar cell module is being referred to by the term “the solar cell module” at line 4. Note that parent claim 7 at line 1 refers to plural solar cell modules. It is suggested that said term be changed to “each solar cell module”.

Claim 11 is indefinite because it is not clear which tile is being referred to by the term “and tile” at line 4. It is suggested that said term be changed to “and the one tile”.

Claim 12 is indefinite because it is not clear which tile is being referred to by the term “a tile” at line 3. It is suggested that said term be changed to “the one tile”.

Claim 13 is indefinite because “the solar cell module” at each of lines 5 and 7 lacks positive antecedent support in claim 13 itself. It is suggested that the term “a solar cell” at line 3 of claim 13 be changed to “a solar cell module”. The same applies to dependent claims 14-16.

In claim 13, at line 6, it is not clear what is meant by the term “to ridge sided”. It is suggested that said term be changed to “to ridge sides”.

In claim 13 at lines 7-8, at line 3 in each of claims 14 and 15, and in claim 16 at line 5, it is not clear what is intended by the term “from blown off”. It is suggested that said term be changed to “from being blown off”.

Claim 15 is indefinite because “the engaging part” at line 6 lacks positive antecedent support in claim 13. It is suggested that claim 15 be amended so as to depend from claim 14.

Claim 18 is indefinite because, at line 3, “the main section” and “each strip” lack positive antecedent support in claim 17. It is suggested that the entire third line of claim

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18 be rewritten as “wherein the members for preventing the solar cell module from being blown off are strips and a main section of each strip for preventing”.

Claim 19 is indefinite because each of “the main section” and “each strip” at line 3, and “the fastening hole” at line 6, lack positive antecedent support in claim 17. It is suggested that claim 19 be amended so as to depend from claim 18.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7-9 and 12-20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-226908, herein referred to as JP '908.

With respect to claims 7-9 and 12, JP '908's Figures 6 and 8 show several solar cell modules (4) laid on a roof. A solar cell module (4) also reads on a tile in instant claim 7. Between each adjacent solar cell module (4) in the gradient direction are tile bodies (2) (see Figures 1, 6, 8, and 11). The tile bodies (2) read on the instant waterproof members since they can be made from aluminum, which is a waterproof, incombustible material (see paragraph 0043). The tile bodies (2) clearly overlap one side of the solar cell modules (4) (see Figure 8). The tile bodies (2) have substantially the same height as the solar cell modules (4) (see Figures 1 and 8).

With respect to claim 13, JP '908 teaches solar cell module tiles (1) that have already been laid on a roof (see Figure 6). Then, additional solar cell module tiles (1)

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are laid on the roof such that the eaves side of a solar cell module tile (1) to be laid is fastened to the ridge side of a solar cell module tile (1) that has already been laid (see Figures 6 and 8). As seen in Figure 1, the solar cell module (4) of a given solar cell module tile (1) is fastened to the eaves side of the solar cell module tile (1) with fastening strips (8) (see also Figures 4 and 8). Said fastening strips (8) on the eaves side of the tile (1) are also fastened to the peripheral section (5) of tile body (2), which is in turn fastened to the ridge side of the tile (1) that has already been laid (see Figures 6 and 8). Thus, said fastening strips (8), which read on the instant fastening strips, fasten the eaves side of a solar cell module (2) of a tile (1) to the ridge side of a tile (1) that has already been laid. Said fastening strips (8) prevent the solar cell module (4) of the solar cell module tile (1) from being blow off (see paragraph 0045).

With respect to claim 14, the fastening strips (8) of the solar cell module tile (1) to be laid is clearly engaged (by way of said peripheral section (5)) with the ridge side of the tile below it (see Figures 6 and 8). Said fastening strips (8) are coupled to the eaves side of a module (4) which is part of a tile (1) that is laid on the upper edges of the tile below (see Figures 6 and 8).

With respect to claim 15, the fasteners (8) have a height-adjusting screw (32, 32A) which clearly has a tip abutting on an upper surface of the solar cell module tile (1) (see Figures 10 and 13). As noted above, the engaging part is the tile body (2). However, since the fasteners (8) penetrate the tile body (2) from above, they determine the height at the eaves side. In particular, in Figure 8, if the screw holding in the fastener (8) is very tight, then the height at the eaves side as measured from the top of

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fastener (8) will be lower than compared to the situation where the screw is not screwed as tightly.

With respect to claim 16, the each solar cell module (4) clearly has a width that is an integral multiple with the width of each tile so that each solar cell module (4) can fit in a tile body (2) (see Figures 1, 2, and 6). As seen in Figure 6, the fastening strips (8) are arranged at regular intervals in the widthwise direction.

With respect to claim 17, the fastening strips (9), which also prevent the solar cell modules (4) from being blown off, are at the ridge sides to the tiles (1) (see Figures 6 and 8). The fastening strips (9) are fastened to the ridge-side peripheral edge of the tile body (2), which in turn is coupled to the eaves side of the tile to be laid (see Figures 6 and 8). Thus, said fastening strips (9) couple the ridge side of a solar cell module (4) to the eaves side of a solar cell module tile to be laid.

With respect to claim 18, as seen in Figure 12, a fastening strip clearly has an engaging part as well as four elongated fastening holes each near the reference sign (42) feature. When the fastening strip in Figure 12 is used for the fastening strip (6) in Figures 6 and 8, at least two of the holes will be elongated in the direction of gradient of the roof due to the position of the fastening strip.

With respect to claim 19, when the fastening strip in Figure 12 is used for the fastening strip (9) in Figure 8 (see also Figures 2 and 6) for a given tile (1), said elongated fastening holes will be closer to the eaves side of a tile (1) that is laid on said given tile (1).



With respect to claim 20, said fastening strips (9) are at the ridge side of a given solar cell module tile (1) and secure the solar cell module (4). The fastening strips (9) are fastened to the ridge-side peripheral edge of the tile body (2) of the solar cell module tile (1), which in turn is coupled to the eaves side of the tile to be laid on the upper side of said tile (1) (see Figures 6 and 8). Thus, said fastening strips (9) couple the ridge side of a solar cell module (4) to the eaves side of a solar cell module tile to be laid.

Since JP '908 teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

7. Claims 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-200561, herein referred to as JP '561.

With respect to claim 7, JP '561 teaches the laying of solar cell modules together with tiles (B) on the roof of a building (see Figure 10). It is the Examiner's position that photovoltaic cell (2) plus frame sections (1A, 1B, 1D) read on an instant solar cell module (see JP '561's Figure 1). Then, as seen in Figure 10, there is a frame member (1C) between each solar cell module, as well as between the lower-most solar module and the tile (B) at the bottom of Figure 10. The modules and tiles in said Figure 10 are laid adjacent in the gradient of the roof. Said frame member (1C) is made from aluminum, and aluminum certainly is waterproof (see paragraph 0010). The frame members (1C) read on the instant waterproof members.

As seen schematically in Figure 10, said frame members (1C) have substantially the same height as the height of the tiles (B).

With respect to claim 9, said aluminum is incombustible (see paragraph 0010).

With respect to claim 10, there is a waterproof seal (4,5) between each frame member (1D) and the solar cell modules (see Figure 10; and paragraphs 0012 and 0030).

With respect to claim 11, and as seen in Figure 2, the section (1C) has a trough near reference sign (12C). This trough section has the waterproof seal (4) (see Figure 2) and thus, renders waterproof a junction between each the solar cell module and the tile (see also Figure 10).

With respect to claim 12, the frame members (1D) clearly overlaps one side of a solar cell module at frame section (1C) (see Figure 10).

Since JP '561 teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-200561, herein referred to as JP '561, in view of Ouchida et al, U.S. Patent 6,525,264.

With respect to claim 1, JP '561 teaches a solar cell module comprising photovoltaic cell (2); a projecting part (1D) which itself has a trough section formed by

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protruding section (12D) as one wall and tarpaulin (4,5) as a second wall (see Figure 2); and an overlapping part (1C), which itself also has a trough section (see Figure 2) which is formed near reference sign (12C) (see also Figure 10). As seen in Figure 10, the projecting part (1D) of one solar cell module overlaps the trough section of overlapping part (1C) of an adjacent solar cell module or overlaps the trough section which is present in a tile (B). Likewise, as seen in Figure 10, the overlapping part (1C) of one solar cell module overlaps the trough section of projecting part (1D) of an adjacent solar cell module or overlaps the trough section which is present in a tile (B).

With respect to claim 4, and as seen from Figures 2 and 10, the projecting part (1D) extends from a ridge side end to eaves side end of the trough section of the overlapping part (1C).

With respect to claim 5, and as an alternative with respect to the above, when the part (1D) is considered the overlapping part (instead of the projecting part as above), and the part (1C) is the projecting part (instead of the overlapping part as above), then a lower surface of the projecting part (1C) (i.e., the wall (12C) of the projecting part (1C)) contacts the upper edge of tarpaulin (4,5) (see Figure 10). Said upper edge of tarpaulin (4,5) is the upper edge of a rising wall which (along with part (12D)) defines the trough section of the module.

With respect to claim 7, JP '561 teaches the laying of solar cell modules together with tiles (B) on the roof of a building (see Figure 10). It is the Examiner's position that, with respect to claim 7, the photovoltaic cell (2) plus frame sections (1A, 1B, 1D) read on an instant solar cell module (see JP '561's Figure 1). Then, as seen in Figure 10,

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there is a frame member (1C) between each solar cell module, as well as between the lower-most solar module and the tile (B) at the bottom of Figure 10. The modules and tiles in said Figure 10 are laid adjacent in the gradient of the roof. Said frame member (1C) is made from aluminum, and aluminum certainly is waterproof (see paragraph 0010). The frame members (1C) read on the instant waterproof members.

As seen schematically in Figure 10, said frame members (1C) have substantially the same height as the height of the tiles (B).

With respect to claim 9, said aluminum is incombustible (see paragraph 0010).

With respect to claim 10, there is a waterproof seal (4,5) between each frame member (1D) and the solar cell modules (see Figure 10; and paragraphs 0012 and 0030).

With respect to claim 11, and as seen in Figure 2, the section (1C) has a trough near reference sign (12C). This trough section has the waterproof seal (4) (see Figure 2) and thus, renders waterproof a junction between each the solar cell module and the tile (see also Figure 10).

With respect to claim 12, the frame members (1D) clearly overlaps one side of a solar cell module at frame section (1C) (see Figure 10).

JP '561 teaches the limitations of the instant claims other than the difference which is discussed below.

JP '561 does not specifically teach the structure of its photovoltaic cell (2), and, as such, does not specifically teach the base member and support member recited in instant independent claim 1.

Ouchida et al teaches a photovoltaic cell comprising semiconductor layer (402), a sealing resin film (403), and a thermal insulation layer (404) (see Figure 12; and col. 18, lines 23-44). The sealing resin film (403) corresponds to the instant rectangular base member and can include aluminum foil, which is incombustible material, as per claim 2 (see col. 18, line 5). The thermal insulation layer (404) corresponds to the instant insulating support member and can be made from resin foam, as per instant claim 3 (see col. 18, lines 34-44). Ouchida et al's photovoltaic cell structure provides the advantage of suppressing photo-degradation and providing large output (see co. 4, lines 16-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Ouchida et al's photovoltaic cell structure for the photovoltaic cell of JP '561 because Ouchida et al's photovoltaic cell structure provides the advantage of suppressing photo-degradation and providing large output (see co. 4, lines 16-19). When Ouchida et al's photovoltaic structure is used as the photovoltaic cell in JP '561's module, the overlapping and projecting parts (1C, 1D) will be on the base member (403) because, as seen in JP '561's Figure 2, said parts (1C, 1D) are on the rear of the photovoltaic cell (2).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '561 in view of Ouchida et al as applied to claims 1-5 and 7-12 above, and further in view of Nakazima et al, U.S. Patent 6,365,824.

JP '561 in view of Ouchida et al, as relied upon for the reasons recited above, teaches the limitations of claim 6, the difference being that JP '561 in view of Ouchida et al does not specifically teach the drainage grooves in claim 6. Nakazima et al teaches a

solar battery module comprising a tile into which the solar battery (i.e., photovoltaic cell) (6) is inserted and having grooves (55) for water drainage extending from ridge to eaves sides of the tile (see Figures 5 and 6; col. 4, lines 16-23; and col. 6, lines 25-41).

Nakazima et al's tile structure provides the advantage of protecting the connecting terminals of the module from rainwater (see col. 1, lines 45-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the tile of Nakazima et al below the insulation layer (404) of JP '561 in view of Ouchida et al because Nakazima et al's tile structure provides the advantage of protecting the connecting terminals of the module from rainwater. As such, Nakazima et al's tile is then considered to be the instant insulating support member.

#### ***Information Disclosure Statement***

11. The information disclosure statement (IDS) filed July 26, 2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it does not provide a list of all patents, publications, applications, or other information submitted for consideration by the Office (for example, a PTO-1449). The search report that said IDS indicates as accompanying the IDS is part of the IFW file and was received in the Office on 02/06/2004. Said IDS filed July 26, 2004 has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based

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on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

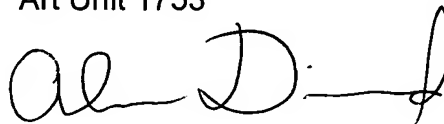
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond  
January 6, 2005

Alan Diamond  
Primary Examiner  
Art Unit 1753

A handwritten signature in black ink, appearing to read 'Alan Diamond', with a stylized flourish at the end.